Bringing technology to early childhood education

There have been studies conducted on bringing technology to early childhood education. There has been seen benefits on introducing technology to early education but they were able to see some difficulties and disadvantages in doing so. The researcher is trying to find out the different advantages and disadvantages and see which outweighs, benefits or the shortcomings.

The function of technology in early childhood education, birth to age eight, is a contentious matter. Parents and educators are concerned regarding possible benefits or damages to young children. Critics argue that technology in schools wastes time, money, and childhood itself by getting a move on the pace and cutting down on important learning practices (Cordes & Miller, 2000; Healy, 1998). Supporters propose that children should have the benefits that modern technologies can offer. Considerate observers are worried that at the same time as exciting and potentially valuable things are occurring with children and computers, we may not be utilizing these tools in the paramount ways, or acquiring the results we expect (Healy, 1998; Kleiman, 2000).

The topic is from time to time presented as a simple question: Should my students, my children, make use of computers or not? While this query is valid, the questions are broader and more complicated. Computers are by now in homes and classrooms, and little children are using them. Additional helpful question is what are suitable and important uses of technology with children? Furthermore, given that technology is being used, how can teachers take advantage of the capacity of these tools to improve children's learning and growth, while keeping away from possible problems?

Research proposes suitable and efficient uses of technology in early learning and offers guidance in deciding on the tools and making the environment necessary for profitable technology use. Studies point to how technology can be used to hold up and promote the growth and education of preschool and primary age children. The significant factor is a fair method to technology in learning, with considerate preparation to give for the significant needs of early days.

Vygotsky (1978) states that, children's learning begins long before they attend school and that any learning a child encounters in school always has a previous history. According to the Harvard University Scientific Council on the Developing Child (2007) the quality of a child's early environment and the availability of appropriate experiences at the right stages of development are crucial in determining the strength or weakness of the brain's architecture, which, in turn, determines how well he or she will be able to think and to regulate emotions. It is important to get an understanding of the preschool environment about the way the children learn and that the social and intellectual characteristics of teachers and parents have an influence on the children (Vygotsky, 1978).

Vygotsky (1978) further argues that there is a difference in the way preschool and school children learn. Children are born as being inquisitive, energetic, passionate motivated, risk taking, thinking and do the impossible, creative, can see the end product, try over and over again and can learn through mistakes (Peel & Prinsloo, 2001: 5). Conezio & French (2002) states that many early childhood teachers are hesitant about introducing science in

their classrooms, often because of their own unpleasant science education experiences.

Statement of the problem:

Is it beneficial when technology is injected to children in early education? How does technology, being part of the curriculum, become an improvement in teaching methods?

Does technology help children build interest to learning? How does this help the children in being participant in school?

Is it the right timing for children aged 6 and below to learn with technology around them? What are its implications in terms of learning?

Literature Review

Studies show that when computers are located in the classroom, children's developmental gains from using appropriate software are significantly greater than when they are in a computer lab (Davis & Shade, 1999). Reasons cited include:

Limited exposure to computers when they are placed in labs

The tendency to use drill-and-practice software in labs, while more tool-oriented software is used in classrooms

Less collaboration and peer tutoring in lab settings

Other studies offer additional support for locating computers in the classroom:

Using a computer laboratory pulls children out of their usual setting and takes away other rich options (Bredekamp & Rosegrant, 1994)

Using a program as whole-group instruction, common in a lab setting, denies the computer's power as an individual teaching tool (Bredekamp & Rosegrant, 1994)

Computers within the classroom enable children to use or not use them as they wish (Davidson & Wright, 1994)

As detailed in the Social and Emotional Development section, arranging the classroom to allow and encourage conversation around the computers is essential in creating opportunities for student interaction.

High-quality pedagogy and rigorous learning aims should direct the option of materials and tools, as well as technology, to be utilized in learning activities (Bredekamp & Rosegrant, 1994; Davis & Shade, 1999). " Whatever materials or tools are best suited to the activity will be used; sometimes computers are the best tool for the job, and sometimes they are not; the secret is knowing the difference" (Davis & Shade, 1999, p. 237).

Computers are powerful tools that, as with other technologies, are most beneficial when used as a natural part of the learning experience. This includes:

Integrating computers into the classroom environment

Using them as a part of the ongoing curriculum

Applying their use to real problems for a real purpose (Davis & Shade, 1994)

Written language, like oral language, is learned by doing things with words in the real world, using language for a purpose (Novick, 1998). Early childhood classrooms encourage written literacy by providing materials to use in pretend play, and by encouraging children to express themselves in writing (IRA & NAEYC, 1998). Studies indicate that word-processing software encourages writing, and leads to increased motivation and improvement in writing skills.

Computers and writing programs can be used with preschool aged children to explore written language, and their use can be successfully integrated into process-oriented writing programs as early as first grade or kindergarten (Clements & Nastasi, 1993). Such software:

Provides critical support, or scaffolding, for young writers, enabling them to perform tasks they could not perform by themselves (Clements & Nastasi, 1993)

Allows children to compose longer and more complex stories and worry less about mistakes (Davis & Shade, 1994)

Facilitates positive attitudes toward writing and word processing among children from kindergarten through primary grades (Clements & Nastasi, 1993)

Encourages students to write more, more effectively, and with greater fluency (Apple Classrooms of Tomorrow, 1995)

Helps children gain confidence in their writing and increases motivation to write more when using computers than with paper and pencil (Clements & Nastasi, 1993)

Computers also provide students a private place for practice while learning, without fear of public failure. " Especially during the primary grades, when children are expected to acquire an acceptable level of mastery of mathematical content and literacy, the computer can serve as a supportive tool for those children who have more than average difficulty succeeding" (Bredekamp & Rosegrant, 1994, p. 59).

Preschool teachers bring experience with children, knowledge of the limits imposed by the curriculum frameworks and flow of life in kindergartens. They also need to master a number of practices and to be aware of preschool technology experiences and their importance in subsequent school development. They also have to be adaptive learners.

One of the teacher's role is to gain access to the children's ideas about technology and to make the right decisions on how they can be developed. The main goal of education should be seen in the development of intellectual and creative abilities of students. Piaget (1929) worked on how children's ideas develop. Recent studies (Raper et al 1987, Reiss 1993) show that effective teaching and learning depend on childrens' existing ideas and subsequent good teaching. So, the way teachers accept and teach technology is very important to young children. New Technologies (NT) provide new opportunities to the teaching and learning process. Researchers (Clements 1994, Shade et al 1990) have shown the gains and the obstacles

of the use of technology in education. It is noticeable, that they all agree that technology is a useful tool in the teaching process when it is not misused (Aubrey 1994, Campbell et al. 1992, Shayer et al 1981).

As preschool educators become active participants in a technological world, they need training and support to find ways to incorporate technology into their classrooms. So, education on NT to preschool teachers is an important factor of applying technology to children's classroom.

Young children have needs that are real and different from those of older children and adolescents. Children from birth to age eight are learning rapidly, using all of their senses and their entire bodies to take in sensations and experience the world around them. During this period of their lives they learn through their play and exploration across five essential developmental dimensions (Kagan, Moore, & Bredekamp, 1995). These dimensions include:

Social and Emotional Development. The ability to form and sustain relationships gives meaning to learning experiences. Responsive interactions provide a sense of well-being that enables children to form attachments with others and participate positively in educational activities.

Language Development. Language empowers children to participate in both the cognitive and affective parts of the educational program. Experience with written and oral language provides children with the tools to interact with others, and to represent their thoughts, feelings, and experiences.

Physical Well-Being and Motor Development. A child's health is connected to preparedness for and performance in learning activities. Healthy children are

able to focus on and actively engage in experiences crucial to the learning process.

Cognition and General Knowledge. Children need opportunities to interact with the people and objects in their environment, and to learn from their surroundings. Experiences and interactions with peers and adults allow children to construct knowledge of patterns, understand relationships between objects or events, and learn ways to solve problems.

Approaches Toward Learning. Children can be successful learners in many different ways. By understanding the predispositions and learning styles that influence a child's response to learning opportunities, adults can encourage and increase engagement.

Children's activities and experiences with computers will evolve over time as they grow and develop. Very young children often use computers with help from an adult or older child. As they mature children use computers more independently, and the teacher's role moves from guidance toward monitoring and active facilitation.

Young children learn through exploration and discovery. If computers are used with children in kindergarten, preschool, or child-care settings, the computer should be one of many activity choices they can explore (Bredekamp & Rosegrant, 1994).

During choice time, for example, a computer center may be one of several options.

Children frequently use computers for short periods, then become interested in another activity. Three- to five-year-olds generally spend about the same amount of time at a computer as they do on other activities such as playing with blocks or drawing. They are more interested and less frustrated when an adult is present, and much of the computer use will be facilitated or mediated by the teacher, which is consistent with best practice at this level (Clements & Nastasi, 1993).

For this age the value of the computer is in its open-ended use, not in creating a product (Davidson & Wright, 1994). The teacher's role is to create an environment in which children become aware and explore, and then act to support their exploration and inquiry in many different ways. Software programs for this age group should be limited in number and appropriate for children's skill level and the intended use.

As children become more able to read and write on their own they are not limited to icons and pictures on the screen for understanding. More opportunities for independent use become available with increasing language and literacy skills. For example, simple word processors become important educational tools as children experiment with written language.

The teacher's role is to set up the environment and activities, matching technology use to the curriculum as well as to the children's needs and interests. The teacher is less involved in directing the activities, and more involved in monitoring student activities, intervening as necessary to guide and pose questions that encourage thinking.

Research Procedure (Methods)

The researchers plan to have an evaluation on the students before and after the technology is integrated in the curriculum. The evaluation before introducing technology will help us determine the effect on the performance of the students. The researchers will be asking help from different teachers and well-known specialists on early childhood education.

Population and Sample

One classroom, which is composed of 30 students, will be the evaluated. The 30 students will be subdivided to different level of thinking and characteristics. This will be enough for the researchers to have an accurate finding and results.

Research Design

The design of the study is a correlation research since it is intended to determine: first, the relationship of technology to the augmentation of the performance of the students; second, the effectiveness of the incorporating in the curriculum the technology on increasing good competency in terms of grades and performance.

It is also a qualitative study for the researchers will be conducting interviews regarding on the attentiveness of the students due to the introduction of technology mixed with their program.

Instrumentation and Data Collection

The researchers visited the [Insert name of University Library or City Library] for journals, articles and studies needed for the research paper. The

researchers gathered time-series data from different physical training institutions to assure of its validity and consistency.

The primary data will be gathered using quantitative method, as this is best useful with questionnaires. The use of quantitative method will be appropriate for the research because the results in the questionnaires consist of numerical information, mostly based from the ratings included in the questions. Quantitative methods are used to provide reference to numeric calculations and are often used with questionnaires that have a specific goal and a target to achieve. This is helpful in the research, and its instigation in the process needs to be further culminated so that the problem is solved with efficiency and precision.

In gathering data, the researcher would like to clear certain ethical issues that might hinder the processing of data. First, confidentiality will be kept at all costs. As the main reason why questionnaires will be used in the research is for the respondents to feel secure and to be assured that their answers will not be related to who they are. There may be instances wherein the respondent will divulge information that will be detrimental to the company, or to its competitors, depending on the case. Hence, there is a better chance at more responsive respondents if they can be assured of their confidentiality.

Second, the Data Protection Act will be followed at all costs. The compliance with the act will be transparently said to the respondents so that they are further assured that anything they say in response to the questions asked them will only be used for the benefit of the research and not in any other

practices. It should also be clear to the researcher that any information regarding the respondents cannot be released to anyone who is not immediately connected with the research unless permission from the subject respondent has been secured beforehand.

Third, the research must always bear in mind the objectives of the study and never stray away from them. A researcher who has no definite purpose in doing the research is going nowhere and is exerting effort in a research that is not delimited properly and punctually. The purpose of the research is explicitly stated at the beginning of the research and is implied in every step of the realization of the research so as to not delineate the researcher from his goals.

Lastly, the researcher must opt to practice objectivity. As the researcher, he is expected to keep an open-minded approach to the topic, keeping from his mind and personal bias in the subject matter or on the people involved. The reason for doing research is to test existing information, validate, prove or disprove existing ideas, or to test the limits of a certain prospect. Given this simple definition, it is clearly seen that in no form is the personal opinions of the researcher expected to hinder in the subject. Any act that might be biased or subjective will hint of the research's failure to achieve its goals.

Planned Method of Analysis

The researchers plan to analyze the different test conducted through constant evaluation of the trainers and how they perform. There will be a weekly evaluation in terms of how the training last, and the effect of it to

their performance in the field. The performance in the field will be evaluated by the player's stamina, body agility, and resistance.

Conclusion

Technology is an instrument that can offer another way for children to study and add up to their world. Computers can be utilized in expanding suitable ways that are helpful to children, or they can be misrepresented, just as blocks or any other resources can be tainted. And just as pencils do not substitute crayons but rather offer additional methods of expression, computers, or cameras or some other varieties of technology, do not substitute other tools but increase the selection of tools accessible to children to search, generate, and communicate.

When used appropriately by skilled teachers, technology can support and extend learning in valuable ways and can increase educational opportunities for children. The key is finding the balance, knowing how to align the elements of a healthy childhood with the unique capabilities offered by technology.

Preschool teachers bring experience with children, knowledge of the limits imposed by the curriculum frameworks and flow of life in kindergartens. They also need to master a number of practices and to be aware of preschool technology experiences and their importance in subsequent school development. They also have to be adaptive learners.

All teachers found the course very interesting and worked on computers very hard. At the end of the course they learned how to write an essay on a

computer and they became comfortable and confident in using computers. The problem they had to face at the beginning of the course was that they were not familiar with computers and NT. For some of them it was their first time to learn how to use a computer. Another problem they had with computers was the linguistic one. Some teachers did not know English very well and others knew foreign languages other than English. So, they had to learn at least the basic English terminology we use for computers before using the Internet.

At the end of the course, technology proved for these teachers, as a tool for communication and collaboration amongst them and also a tool for teaching children. Telecommunications and the Internet enabled preschool teachers to obtain information about children in kindergartens from around the world and interacted with distant experts and peers. They collaborated on classroom projects and they learned how to use computers and technology in the future. Pedagogical considerations behind the course have shown that teachers become confident using NT when they practice on them at least once or twice a week. So we can conclude that technology is a powerful tool for professional development.